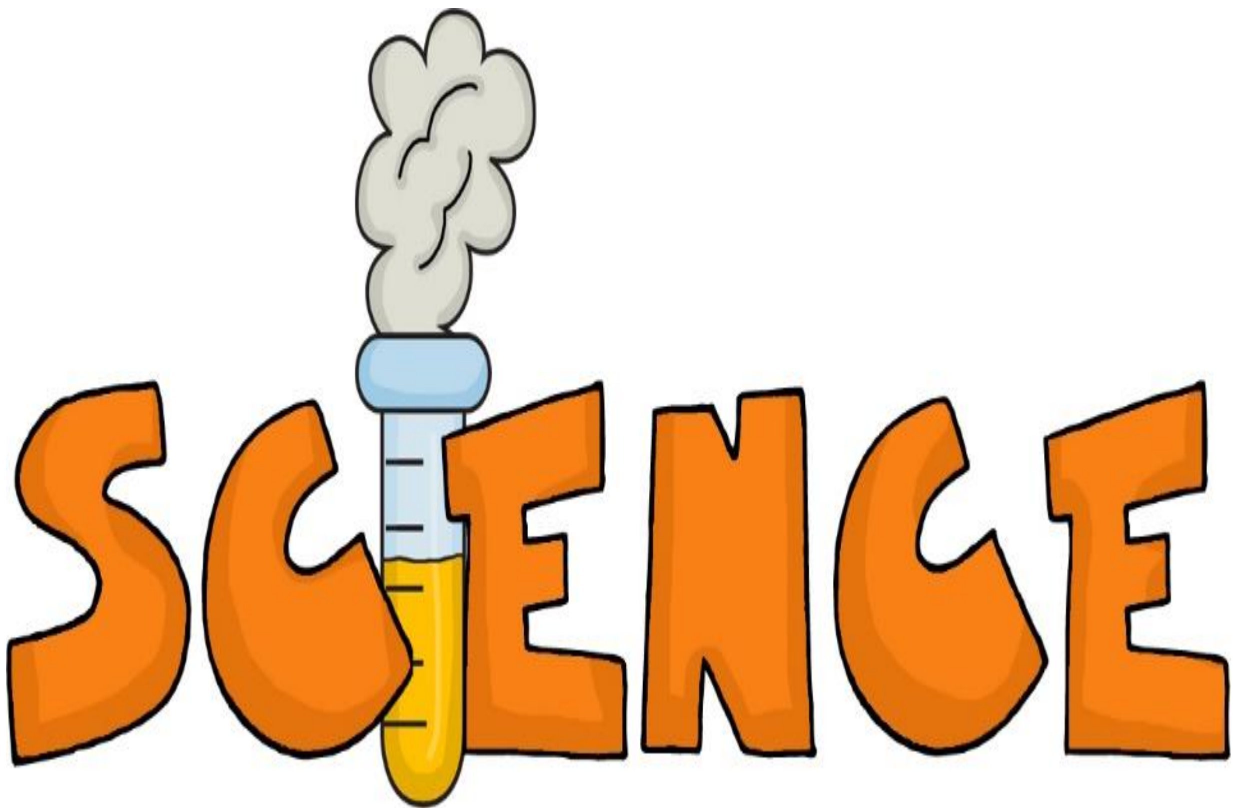
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2024,2025



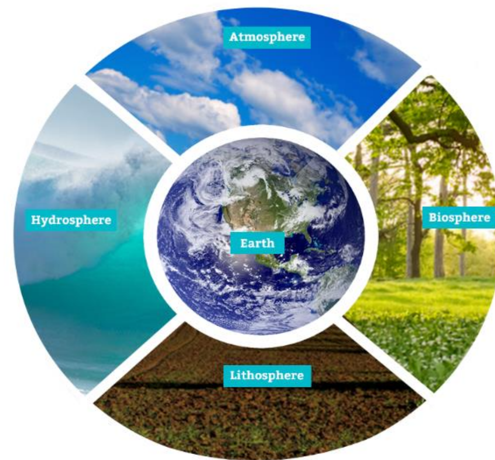
Unit one

concept one :biosphere and Hydrosphere interactions

- Lesson one

- the earth is a complex system that includes living organisms and nonliving things that interact with each other
  - scientists have classified things on the into Four main system which are :

Atmosphere #Geosphere
#Biosphere #Hydrosphere



-1-hydrosphere

- the word Hydro means water
- Hydrosphere is a system that includes all of the water on, under and above earth such as

- ocean - seas - Rivers
- Ground water - Glaciers (ice water) - lakes

Why the water is very important for life on earth ?

1- water can affect nonliving things as it causes weathering and erosion of rocks on earth 's surface

Weathering means the breakdown of rocks into smaller particles

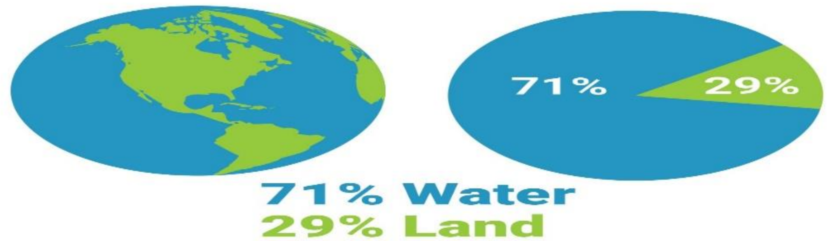
Erosion means the transportation of small particles of rocks to another place

Important of water for life :

- 1- humans and animals drink water to survive
- 2- plants need water to grow
- 3- some animals and plants live in water

Notes :

1- About 71% of earth is covered by water , so our planet looks like a blue marble from space



- Water that found on earth may be :

Salt water (96.5%) ex sea, ocean ,gulfs (bays) and some lakes

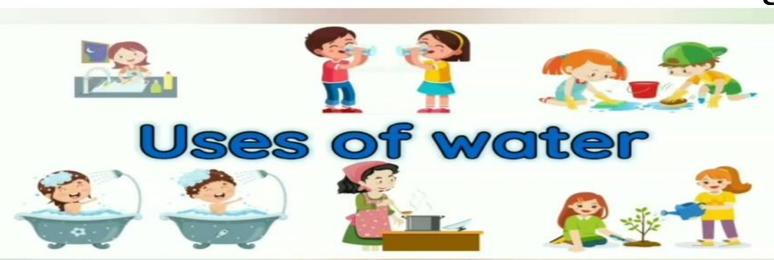
Fresh water (3.5%) ex rivers , rainwater, ground water and most of lakes

2- the total amount of water on earth does not change ,even if water changes from one state to anther , so we cannot make new water , but we can recycle it

Uses of water:

1- preparing food 2- Bating 3- cleaning

4- Recreation 5- travelling 6-manufacturing



Lesson two :water bodies



- 1- oceans and seas :

- they are very large water bodies
- they contain always salt water



2- lakes

- They are surround by land
- most of lakes contain fresh water and some of them contain salt water

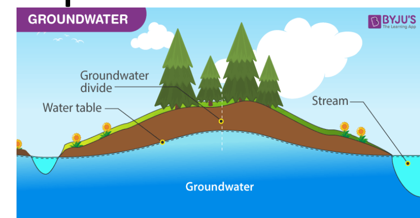
3- Rivers

- A river is a water body that always flows from an area of higher altitude (place)to lower altitude
- rivers always contain fresh water



4- Groundwater

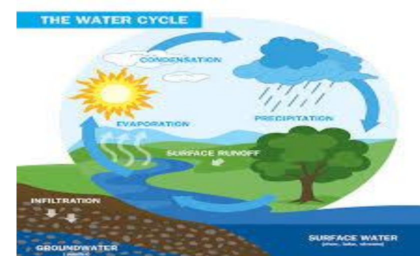
- It is the water that under the Earth's surface due to the leakage of water into earth through a layer of porous rocks
- Groundwater always contains fresh water



Notes :

1- water(water cycle) and plants (seeds)are renewable resource (G.R)

Because they can be replaced in a nature



Most of fresh water is found in form of frozen (glaciers)

Class work

Choose the correct answer:

1- which of the following is a part of the hydrosphere ....

A- water b- air c- rocks d- plants

2- rocks are broken down into smaller particles during ....process

a- photosynthesis b- weathering

c- erosion d- respiration

3- on heating some water ,it changes from ....to ....state

a- solid – liquid b- liquid – gas c- solid – gas

4- water is used in all the following purposes ,except

a- recreation b- burning c- bathing d- cleaning

Scientific term :

1- a water body that is surround by land ( )

The process in which the small particles of rocks are transported from place to anther ( )

Give reasons :

Water is important for all plants on earth

....

Home work

- Complete :
- Fresh water forms some water bodies such as ………and ……………………..
- salt water forms some water bodies such as ……….and ………….
- the importance of water are ……………..and,……………………
- some uses of water are ……………………and ……………….

What happens

The state of water when it is subjected to extreme cold weather ?

…………………………………………………………………………………………

Lesson three: earth system

- 2- Geosphere

- The word Geo means earth , it also know as lithosphere
- includes 1- rocks 2- minerals 3- soil
- 4- landform (mountains , valleys) 5- molten rocks

3- Atmosphere

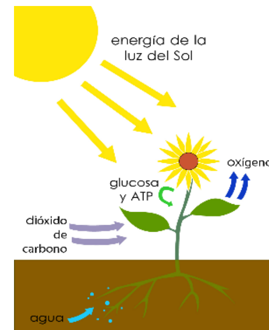
- The word Atmos means vapor or air
- includes all gases that surround earth such as
- 1- oxygen 2- carbon dioxide 3- nitrogen

4- biosphere

- The word Bio means life
- includes all living organisms on earth
- 1- humans 2- animals 3-plants

All earth's system interact with each other ex:

Earth’s system interact

interactions	
Hydrosphere interact with geosphere	• Erosion of rocks by water  • Formation of lakes 
Atmosphere interact with biosphere	*during photosynthesis process ,plant s take in carbon dioxide gas from the air and give out oxygen gas which in important for respiration of all living organisms 
Geosphere interact with biosphere	During photosynthesis process , plants roots absorb nutrients from the soil to make their own food

Some characteristics of biosphere

- Bio

It is a large area of the world that has similar soil, climate , plants and animals such as

1- Deserts 2- forest

3-Rainforests 3-grasslands

Class work

choose

1-Nitrogen and oxygen are gases that make most of the ....

a- biosphere b- geosphere c- atmosphere

2- all the following water bodies contain salt water , except ....

a- gulfs b- seas c- oceans d- rivers

3- which of the following is found between porous of rocks below earth surface ....

a- ice b- groundwater c- ocean d- sea

4- geosphere is also known as

a- atmosphere b- lithosphere c- biosphere

G .R:

Most of the fresh water on earth can't be used for drinking

....

Put true or false :

- 1- desert and forest are example of biomes ( )
- 2- fresh water forms about 3.5% of water on earth ( )
- 3- respirations of human shows interactions between geosphere and biosphere ( )
- 4- most of salt water on earth is found in the form of frozen water ( )

Scientific term :

1- a large area of the world that has similar soil , climate, plants and animals ( )

what happens if :

- Plants can't get carbon dioxide gas from air ?
- ....

Lesson four :types of Aquatic ecosystem

- - Saltwater ecosystem (oceans and seas)

includes:



1-Shallow areas

These area contain coral reef and intertidal zones

Intertidal zones :

Is the area along the coast that disappears underwater at the high tide and appears at the low tide

2- deepest areas

Theses areas are called abyssal zones

- These are very deeps area , so sunlight can't reach them

- Saltwater lakes:

- Such as : - lake bardawil in Egypt

- - lake Assal in Djibouti (has a high concentration of natural salt so most of aquatic animals can't live in it but few plants and many bacteria can live)

• Fresh water ecosystem

includes:

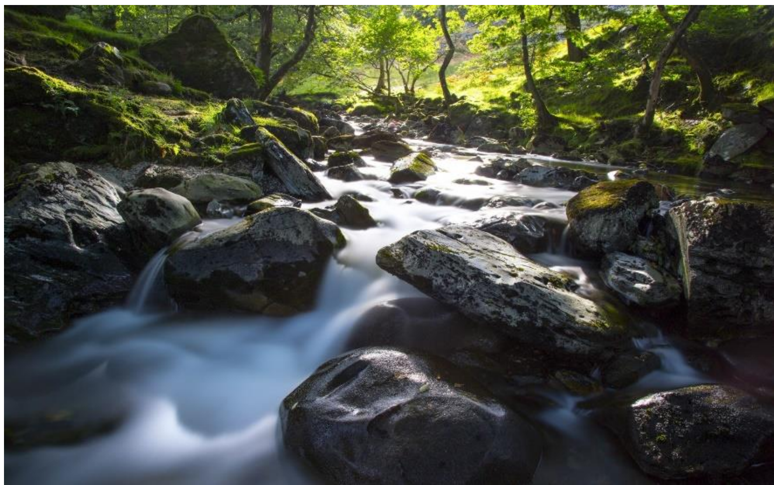
1- ponds and most lakes

Such as : lake Nasser in Egypt

- 2-Flowing water bodies

such as : rivers and streams (small bodies of following water)





(rivers) (stream)

	Oceans	seas
Types of water	Salt	Salt
Water movement	Running (waves)	waves
Types of species	Kelp Dolphin Starfish Moses fish (flounder)	

Lesson five :Aquatic ecosystem

	Ponds	**Stream**
Types of water	Fresh	Fresh
Water movement	Still water	Running water
Species live in ponds	Water lilies Worms Frogs and salamanders	Catfish Salmon (trout)

Class work

- Complete:
- 1- we can classify the aquatic ecosystem in different ways such as ……………………ecosystem and …………ecosystem
- 2- from example of freshwater lakes in Egypt ………….
- 3- dijbouti has lake Assal which is ……….ecosystem
- 4- salt water forms about …………….of water on earth
- 5- abyssal zone in the ocean is a dark area as …………….cannot reach it
- Choose:
- 1- water evaporation and its condensing on earth show an interaction between ………………and ……………..

a- atmosphere – hydrosphere b- hydrosphere – biosphere

c- biosphere – geosphere d- biosphere – geosphere

2- all the following are characteristics of abyssal , except …….

a- they are very deep areas b- sunlight cannot reach them

c-they are dark area d- they are shallow areas

G.R

1- no green plants can survive in the abyssal zones of oceans

…………………………………………………………………………………………

Concept two

water as a valuable natural resource



Lesson one :The important of water

- You have studies that human can use water in many purposes such as : drinking , bathing ,Generating electricity (Aswan High Dam) and Agriculture

- There are many sources of water on earth

Salt water	Fresh water
Oceans, seas and some lakes	Pond ,stream , Glaciers and rivers

- So we must conserve fresh water (using water in correct way)
- 1- turning off water tap during brushing your teeth
- 2- tacking a quick shower
- 3- turning off the water ,while washing your hair

in this activity we will study some water bodies in details :

1- river :



- Contain fresh water
- starts in the high place (mountains)
- the flow of a river ends when it meets a sea

Lake :



- Contain fresh or salt water
- they locate in low- lying area
- surrounding by land

3- wetland :

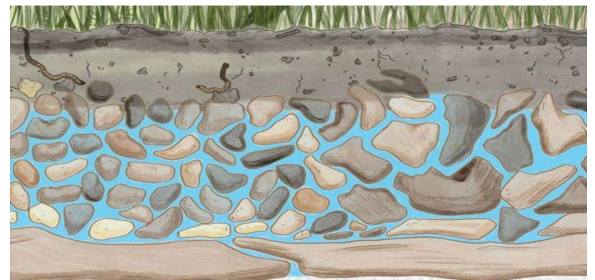


- Contain fresh water
- They are lands partially covered with water
- Such as :ponds and swamps

4- estuary :

- contain salt water mixes with fresh water
- location :when a river meets sea or ocean
- Estuaries are home of many plants and animals



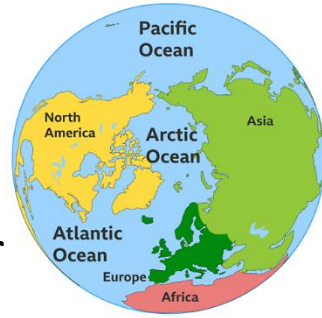


5- ground water :

- Contain fresh water
- location: in the cracks and spaces of underground rocks

Note:
There is more amount of ground water on earth than all the water found in rivers and lakes

6- oceans:



- Contain salt water
- Location : surround the continents
- all of the oceans are connected to each other
- the ocean's floor has mountains and plains

Class work

Choose:

1-All the following are from sources of water on earth , ……

a- groundwater   b- ponds   c- glaciers   d- molten rock

2- there is a /an ……..between Nile river and Mediterranean sea

a- lake   b- wetland   c- ocean   d- estuary

3- the amount of salt water on earth is ………...the amount of fresh water

A- larger than   b- smaller than   c- equal   d- half

4- the type of water that is found in the sea is …………… water

a- salt   b- fresh   c- salt and fresh

Give reasons :

- We must conserve fresh water ?
- ……………………………………………………………………………………

What happens :

Water is collected in a low – lying area

…………………………………………………………………….

Home work

- Complete :
- 1- rivers contain ………….water , while oceans contain …………..water
- 2- the land that is partially covered with water is called ……………
- 3- we can use water in ………..and …………

4- a water body which contain a mixture of sea water and river water …………….

Give reasons :

- You should turn off water tap during brushing your teeth
- ……………………………………………………………………………

- Scientific term :

- - it is the liquid that all living organisms need to live (   )

Lesson two : earth's fresh water bodies

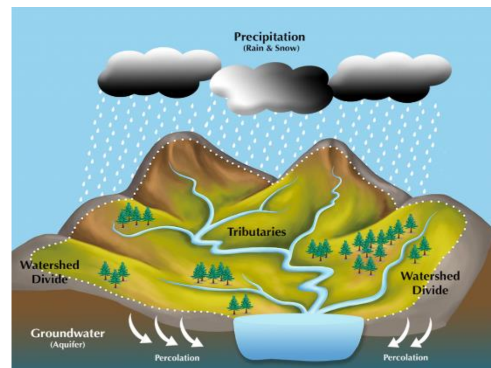
- you have learned that you must protect the fresh water
- About 10 %of the world's animal species live only in fresh water habitats
- Poor quality of fresh water leads to :

- The death of thousands of living organisms every year
- the extinction of some species live in fresh water such as

- fish and amphibians
- fresh water resources on earth are limited, so we should use some strategies to control and conserve fresh water such as (building dams across rivers to store water)
- these human activities causes imbalance of water that leads to :

- Drought - flooding

➢ now we will study what would happen if there is imbalance of water in a watershed ?



Watershed :
It is an area of land where water from different sources flow in one direction towards a common location such as bay , ocean , sea or other large water body

➢ when there is more rainfall , the level in river or stream will increase causing floods

➢ When there is too little rainfall ,the level of water in river or stream will decrease causing drought

Lesson three: watershed predictions

- watershed can help scientists how the water bodies in an area interact with one anther
- Now , we will study some human activities that take place in some water bodies as tributaries and affect people ,plants and animals that live near on them .

Tributaries :
They are small water bodies such as creeks , or streams that flow into bigger rivers

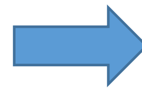


- as you have studied before that water bodies are connected with each other , we can conclude that:

Tributaries as small creeks or stream



Bigger rivers



Larger water bodies as sea or oceans

- Note:
- What happens upstream(river start) affects downstream(river end) such as :

1- if a factory is built near a tributary

- The factory waste will affect the tributary at area (A)
- water in tributary at area area(A) carries the waste to other bodies causing water pollution

2- if a dam is built across a tributary at area (B)

- the dam will hold the water behind it and this causes a change of amount of water

3- if there is a farm using chemical fertilizers near a tributary at area (C)

- the water will affect causing water pollution



Class work

- Put true or false :

1- high quality of fresh water leads to the death of living organisms live in it ( )

2- when there is more rainfall , the level of water in river will decrease ( )

3- we must conserve fresh water , because it is limited on earth ( )

4- the water of tributaries flows directly into seas and oceans ( )

5- upstream is the place where a river start ( )

Scientific term :

1- a building established across a river which can hold water behind it ( )

2- it is an area of land where all the water flows in own direction to a common location such as ocean and sea or other large water bodies ( )

What happens:

-the quality of fresh water become warm

……………………………………………………………………………………

-A trash dump is established near to tributary that is connected with a river

……………………………………………………………………………………

Home work

- choose
  - (chemical fertilizers – bays – creeks – seas – dams – streams)

1- tributaries are considered as small ……….or ………that flow into bigger rivers ,then into large water bodies as ……….and …………….

2- a farm that is found near a tributary may cause pollution to the water body if this farm is using …………………

3- building ……………… across a tributary can change the amount of water in it

Put true or false :

1- the human activities that take place in water cannot affect people (   )

2- downstream is the place where a river ends (   )

3- waste produced from factories that are built near a watershed can affect the quality of water in downstream (   )

Lesson four :conservation ,preservation and sustainability

- there are many things we use every day that are made from natural resources such as :

Natural resource	object made from natural resources
Tree	paper
Oil products	Most plastic
Plant and animals	Clothes (cotton and wall)

Human can conserve natural resource in different ways such as :

- 1- preservation :

- preservation of resources means control reaching of human to these resources or using them example :

Some protected area:

- Ras Mohammed protectorate in south Sinai
- Wadi Al – Hitan protectorate in Fayoum

Natural	Results when using them more quickly
Fish	If the catch of fish by humans (overfishing), they become rare and fishing will decrease
Groundwater	If groundwater of wells are used faster than they are replaced by rains , it will become dry

- 2- sustainability :

- sustainability means using natural resources in a way that does not negatively affect the future supply of these resources example

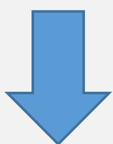
Cows feeding on grass in a field where grass grows slowly





Unsustainable situation

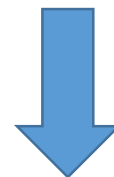
If cows are placed in many small area of grass , they begin eating all grass



This causes the disappearance of grass

sustainable situation

If cows are placed in one large area of grass so , the cows still have more food



This causes the grass to grow back In others area

Renewable resources can be classified into :

Renewable resources such as :water , plants ,animals

Nonrenewable resources such as : Oil ,coal

- Note :

- Renewable resources can be can be used up if people don’t use them wisely such as

➢ pollution

➢ Burning

➢ deforestation (cutting down too many trees

<u>All this factors lead to damage the renewable resource</u>

- Human creates many methods to filter dirty water , to recycle wastewater or polluted water to be used again in some other purposes (remove harmful materials from water)





classwork

- Choose :

1- plastic cup is made from ………….products

a- plant b- animal c- oil d- human

2- cutting down too many trees of forest leads to …………….

a- deforestation b- over pollution c- sustainability

3- in simple water filter , wastewater must pass through ……

a- cotton – charcoal – sand

b- cotton – sand – mud

c- charcoal – cotton – sand

d- sand – charcoal – cotton

4- paper of books are made from ………..

a- oil products b- wool d- trees d- cotton

5- the role of water filter is

a- adding waste materials into the water

b- moving polluted water to other place

c- removing waste materials from water

d- increase the amount of polluted water

6- we can use all the following objects to make a simple water filter except ……………..

a- cotton b- mud c- charcoal d- sand

Give reason :.

Scientists recycle fresh water to get filtered water again

……………………………………………………………………………………………

Scientific term

- the action of control reaching of humans to the natural
- resources ( )
- it means using resources in a way that does not negatively affect the future supply of theses resources ( )

Put true or false :

1- soil pollution causes the death of plants and animals ( )

2-you can conserve water by leaving the tap open during brushing your teeth ( )

3- dams can be used to filter polluted water to be used again

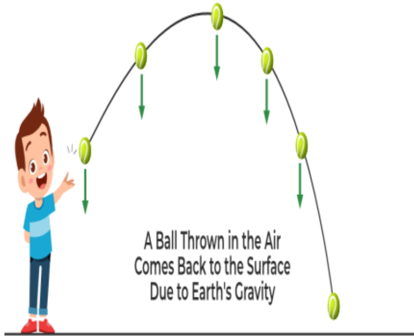
( )

4- water is considered as a nonrenewable resources ( )

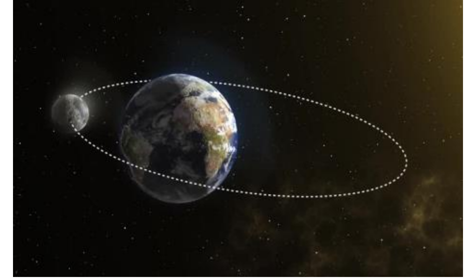
Unit two
patterns in the sky



Concept one :Effects of Gravity lesson one







- If the ball is thrown into the air ,it fall down toward the ground
- The girl moves down the slide
- the moon still revolves in its orbit around earth

- the pictures shows the effect of gravity on different object

Gravity :

It is the force of attraction (pulling)between objects that have mass

The gravity of the moon affects the ocean tides

Class work

- Choose :

1- gravity keeps the moon revolve in orbit around ……………….

a- sun b- earth c- itself d- anther moon

2- gravity pulls objects towards the ……….of earth

a- center b- tides c- earth d- gravity

3- without the force of gravity , the moon would ……….off into space

a- orbit b- gravity c- sun d- float

4- the gravity of the moon affects the phenomenon of ocean ………………….

a- center b- earth c- tides d- gravity

Put true and false :

1- gravity affects the movement of object ( )

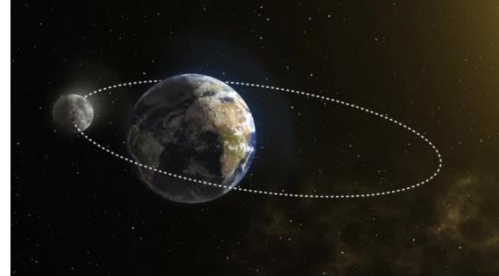
2- planets in the solar system revolve in fixed orbits due to the gravity between the sun and planets ( )

3- we can observe the gravity during the movement of a skydiver ( )

Lesson two : gravity effect

- you have learned that gravity pulls objects toward the center of the earth

- Gravity affects two objects even when they do not touch each other , such as earth and moon

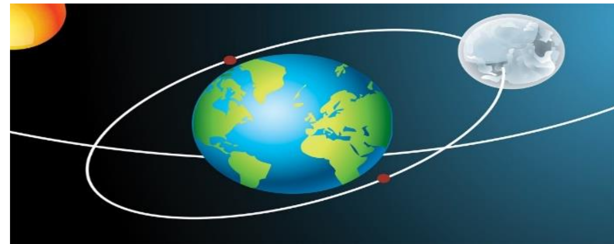


- There are two factors affect gravity :

1- mass

- Gravitational force (gravity)of an object increases, as its mass increases and vice versa such as:

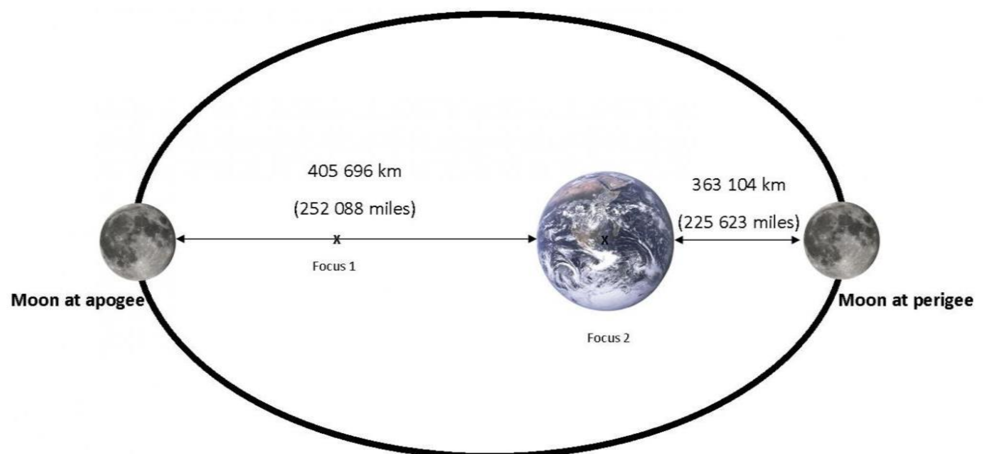
gravity between Earth and moon



2- Distance :

Gravitational force (gravity) decreases , when the distance between two objects increase and vice versa such as:

earth and moon



There are many types of forces such as :

Forces
It is a pull or push that is applied to an object

- 2- wind turbine

- Wind pushes on the blades of a wind turbine to move



- 3- magnets

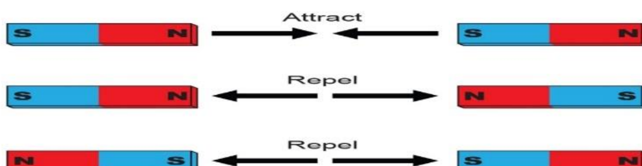
- Magnet has a kind of invisible force that can not be seen , known as magnetism

Magnetism :
It is a force of attraction or repulsion (push) between two magnets or between a magnet and an object

- Such us :
- A magnet Pulls paper clips up



- A magnet pushes away anther magnet



Class work

- Choose :

1- wind turbine blades move by the effect of ………

a- magnetism b- wind c- wind

2- a person can exert a weak force to move ………..

a- big truck b- a toy car c- a real car d- big rock

3- gravity force of earth is affected by ………..

a- mass and time b- mass and distance c- mass only

4- magnetism is a kind of ……… force

a- attraction only b- repulsion only c- invisible

scientific term :

1- the effect that pulls or pushes an object to make it moves ( )

2- the pulling force that causes object to fall down toward earth's surface ( )

What happens :

- The mass of moon decreases to half
- ………………………………………………………………………….

Home work

- Complete :

1-the object at rest needs……………… To move

2- A magnet can attract some objects by a force called………..

Give reasons :

- The moon is attracted to earth
- ……………………………………………………………………………………

Lesson 3, 4 and 5

- You have learned that gravity is the force of attraction that exists between objects that have mass
- we find the effect of the gravity in every thing around us such as : 1-In the spaces

the force of gravity keeps the

Planets revolve in their orbits



Note:

The gravity act on falling ,moving and don't move objects such as (boy sits on a chair or book on a shelf)

4-Friction force

- It is force that opposes the motion of the body across a solid surface or through a gas or liquid
- it is generating between two touching surfaces
- Friction slows the movement of objects
- example :

A bicycle brake pulls back the movement of the tires by friction when the bicycle brake rub against the tires



5-Air resistance force

- It is a force that opposes the movement of an object as it passes through air
- Air resistance is considered as a type of friction force
- Example :
- Skydiver releases parachute to slow his drop , where :

when they skydiver opens his parachute, it gets filled with air due to the upward flow of wind forming air resistance to the parachute ,so slows his fall to earth's surface





Gravity and the low of motion

Activity

Tools :

1- two balls with the same size

- plastic ball without holes


- plastic ball with holes


2- paper clip


- feather


Step :

Stand on a chair and drop the two balls at the same time from the same height

- The same steps with paper clip and feather

- Conclusion:

1- the plastic ball with holes took longer time to reach the floor (air passes through the holes)

2- the feather took longer time to reach the floor (it has a lager surface area)

So that , air resistance is a factor that can slow down the fall objects

- Our solar system consists of the sun and a group of planets (8 planets)

- in 1543 a scientist called Nicolous stated that earth

revolves around the earth

- each planet revolves around the sun in a fixed path (orbit)

that has a ellipse (oval) shape

- earth revolves around the sun at a speed nearly equals

107000 Km per hour



- Imagine that there is no air resistance on earth

The objects will reach the floor at the same time

Class work

- Choose :

1- A table stands on the ground needs ....to move

a- sunlight b- mass c- force d- air

2- big objects have ....gravity than small objects

a- bigger b- smaller c- equal d- same

3- .... Is considered as a type of friction force

a- air resistance b- gravity c- magnetism d- electric

4- planets revolve around the sun in fixed ....orbits

a- oval b- irregular c- rectangular d- triangular

5- ....is (are)the center of the solar system

a- earth b- the sun c-the moon d- the sun and moon

What happens :

- The planets if the sun has no gravity
- ....
- if the metal ball and a feather are fallen down from the same height
- ....

- Give reason:

- Planets revolve around the sun in fixed orbit
- ....

Homework:

*Complete the following :

1- The direction of earth`s gravity is always toward .... Of earth

2- Any object has .... Depending on its mass

3-Aparachute in air is affected by .... That acts against the .... Force of earth

4-A person can control the speed of his bike by using ....to slow movement

5-The sun locates at the center of ....

6- Earth revolves around the sun in a fixed path that has .... Shape

....

*Give reason :

1- You always land on the ground when you jump up

....

*Write the scientific term :

1- The tool that is used by skydiver to slow his drop (..................)

Concept two :patterns of motion in the sky

lesson 1,2

solar system

Includes: the sun and 8 planets that revolve around the sun in fixed orbit

Planets rotate on their axes (themselves) at different speeds

Ex : Jupiter is the fastest planets that rotates on its axis

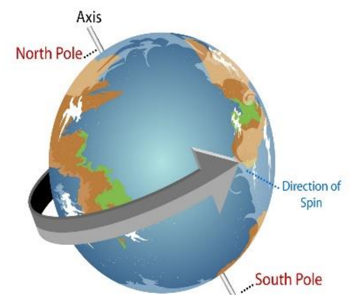
Earth

- Earth spins (rotates)all the time but we cannot feel earth spinning
- we know that from the regular pattern of day and night
- the phenomenon of regular pattern of day and night happens due to earth's rotation on its axis
- earth takes a whole day (24 hours) to make one complete turn on its axis
- During earth's rotation :

- Half of earth faces the sun , so this part has day
- the other half of earth faces away from the sun and doesn't receive away any light ,so this has night

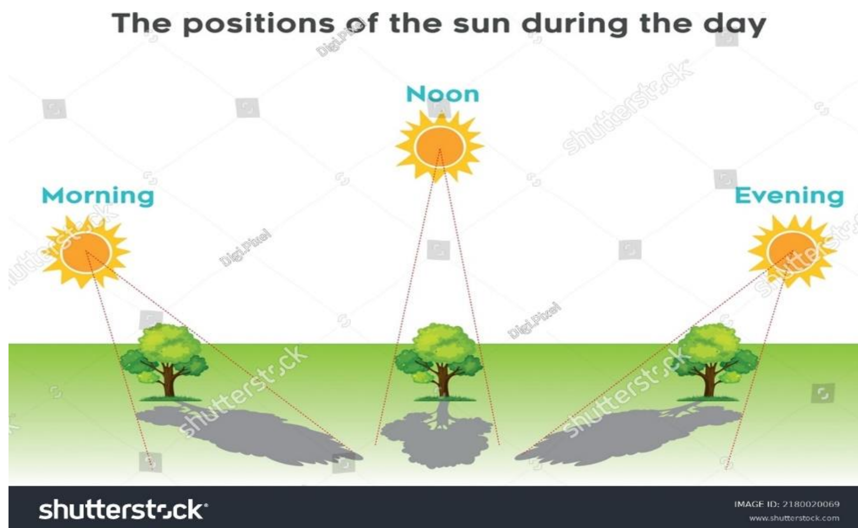
Earth's axis

It is an imaginary line passing through the north pole and south pole of earth



When Earth rotates on its axis ,it causes

- the sun , moon and stars seem to rise in the east and set in the west



- In early morning :

- the sun would be to your right (east), rising in the sky

- At noon :

- The sun would be above you in the center of the sky

- In late afternoon :

- The sun would be to your left (west),setting in the sky

The sun always rise in the east and set in the west

Class work

- Put true or false :

1- earth takes 12 hours to make a complete cycle on its axis( )

2- the half of earth's surface that faces the sun has day ( )

3- the earth's is an imaginary line passes through earth's poles ( )

Choose :

1-The sun appears in the ....during the early morning

a- east b- west c- north d- south

2- the earth rotates around itself once every ....hours

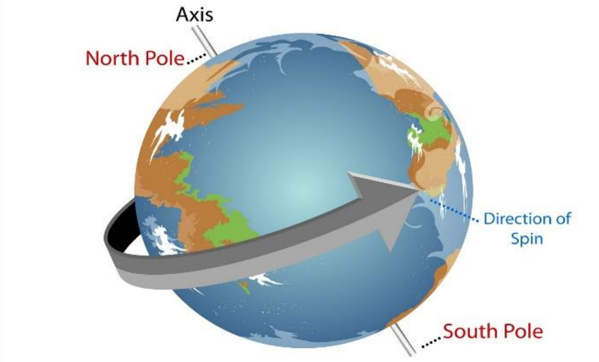
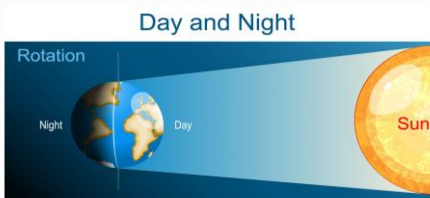
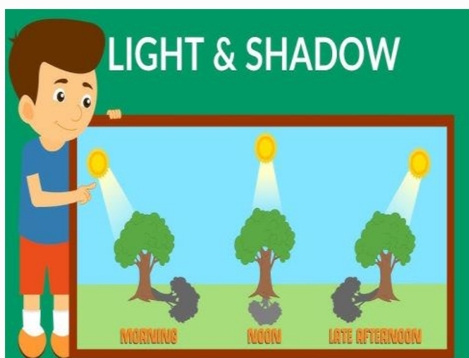
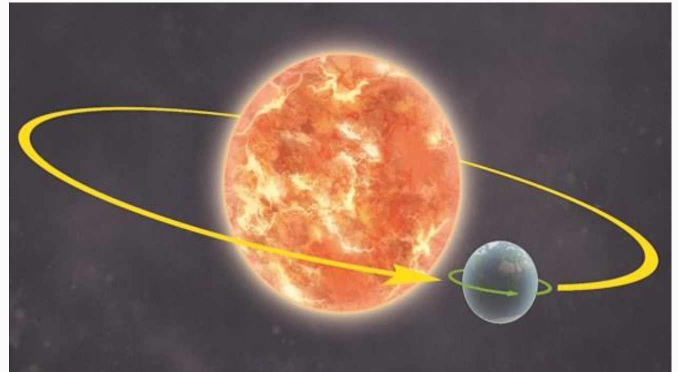
a- 24 b- 28 c- 40 36

- What happens if :

- Half of earth faces the sun

- ....

Rotation and Revolution

Rotation	Revolution
• It is the spinning of an object around an axis  • It causes : the cycle of day and night  -The appearance of the sun , moon and stars as they are moving across the sky -The movement of shadow of object  	It is the orbiting of an object around anther object  • It causes - the cycle of seasons 

- Note : -earth rotates on its axis at high speed that reaches more than 1600 kilometers per hour
- - but we cannot only feel the high speed of earth's rotation because we are moving with earth at the same speed of earth
- there are two factors that affect the length and angle of shadow

1- the position of sun in the sky , where :

-at noon

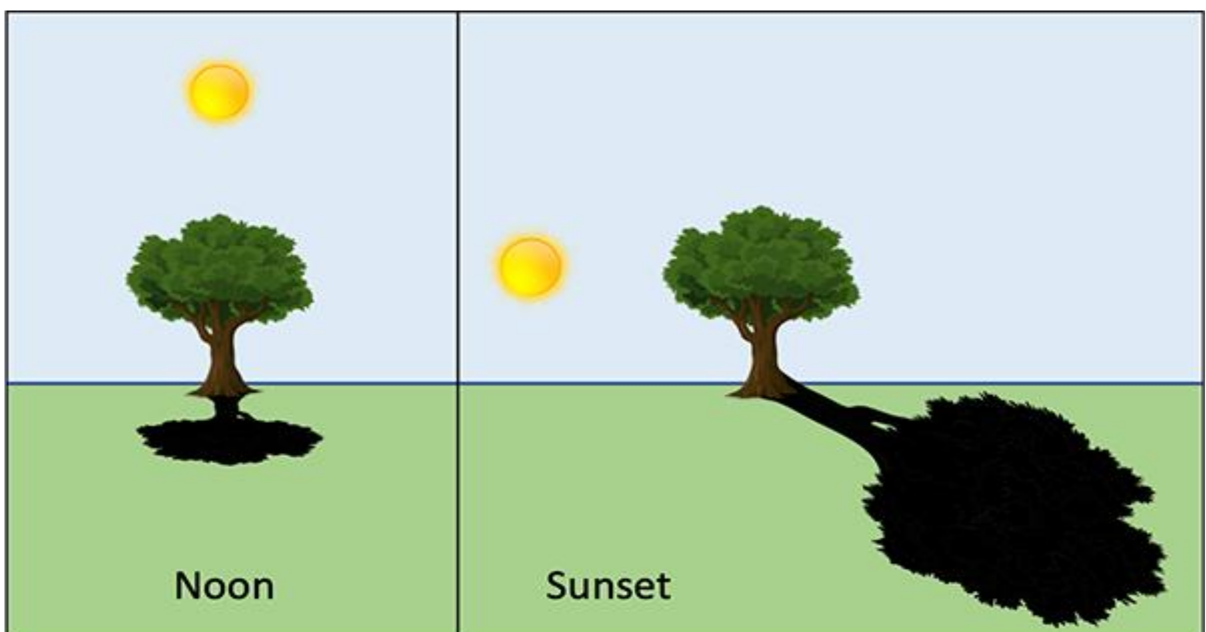
the sun is a high and most directly above us in the sky

so it forms the shortest shadows of objects

- In the morning and afternoon

- the sun is low and at east or west in the sky so it forms ____longer_shadow of objects

2- the amount of sunlight that reaches the earth's surface during different seasons



Class work

- Choose :

1- the number of stars in the in the solar system

a- one b- eight c- four d- two

2- the fastest planet that rotates on its axis in the solar system

a- the sun b- earth c- Jupiter d- the moon

3- the earth's axis is ……….

a- vertical b- horizontal c- circular d- real

What happens if

- Earth stops spinning on its axis
- ……………………………………………………………………………………

Give reason :

-Occurrence of day and night

-……………………………………………………………………………

Home work

- Put true or false :

1- earth revolves around the sun in a fixed path ( )

2- earth revolves around the sun once every one day ( )

3- we can feel the movement of earth easily ( )

4- the position of the shadow of Cairo tower will not change during the day ( )

Scientific term :

1- A phenomenon occurs due to the earth's revolution around the sun ( )

2- the sun and 8 planets revolving around it ( )

Lesson three : what are Stars

- when you look at night sky , you will see a huge number of stars

Stars
They are giant spheres of superhot gases

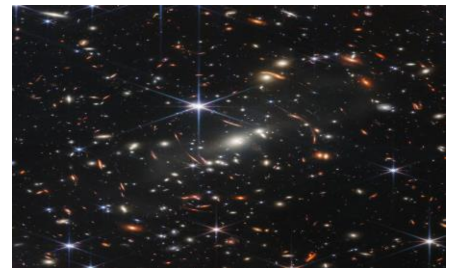
- stars make their own light where are made of hot gases
- Some stars are larger than the sun while others are smaller than it
- Such as : The Sun

- It is a medium- sized star
- it is the only star that is located in our solar system
- it appears so bright in the sky because it is the largest object in the solar system and it is the closest star to the earth
- It provides earth with heat and light

Galaxy
It is a group of stars , planets and gases held together by gravity



Universe
Is the wide space that contain celestials objects as galaxies , stars , comets , meteors and human –made satellites



Human – made satellites like the International space station

As the universe is so big and very faraway to be seen with the naked eye so , technology helps us to invent some tools to see the space in details such as

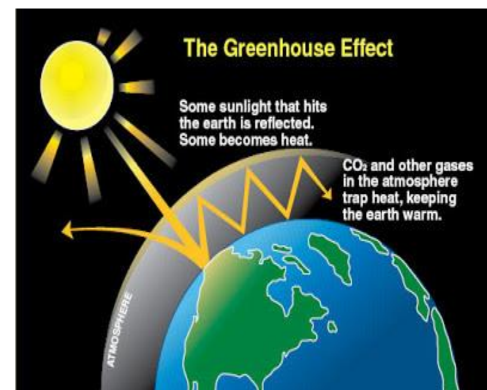
- Binoculars (Galileo binoculars)



- Telescopes (Hubble Space Telescope)



The importance of atmosphere :
Allows some light waves to pass to earth , while it blocks some other light waves



Class work

- Choose

1- the sun is a star that gives off a very big amount of ……….

a- heat only b- light only c- heat and light

2- we cannot send astronauts to study stars , because they are …………..

a- so cold b- faraway c- too small

3- our solar system contain ………..

a- one star b- one planets c-no stars

4- the wide space that contain celestial is called ……………

a- galaxy b- atmosphere c- universe

what happens if :

- The binoculars and telescopes were not invented
- ……………………………………………………………………….

Home work

- Complete :

1- the sun provides us ……….and……

2- the solar system contain only star known as …………..

Put true or false :

1- the international space station is a type of human –made satellites (   )

2- the atmosphere lets all light waves to pass to the earth (   )

3- the sun is bigger than moon   (   )

Lesson four :constellations

- It is a group of stars that forms a pattern or looks like a certain shape in the sky such as constellation orion (ancient Greeks (mythical hunter)



- Note

- Stars that form a constellation are not connected to each other
- look like an animals or person



Movement of constellations (stars)

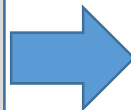
- In fact , the position of stars don't change but

1) Stars seem to move across the night sky



Due to earth's rotation on its axis

2) Constellation appear at different locations in the sky during different times of the year



Due to earth's revolution around the sun

- some constellation are visible but others can be seen only during specific seasons
- location of constellation help us to determine the main direction (north , south ,......)

- We can see different constellations in winter than in summer
- every night , new stars appears from east
- planets and moons don't make their own light (because they reflect light from the sun

classwork

choose

1- the sun and other stars are made up of …………….

a- hot solids   b- hot gases   c- cold liquid

2- Every night , we can see new stars appear from …direction

a- north   b- south   c- east

3- the group of stars that make a certain shape in the sky is called a/ an …………….

a- solar system   b- universe   c- constellation

Give reasons :

- Stars seem to move in the sky

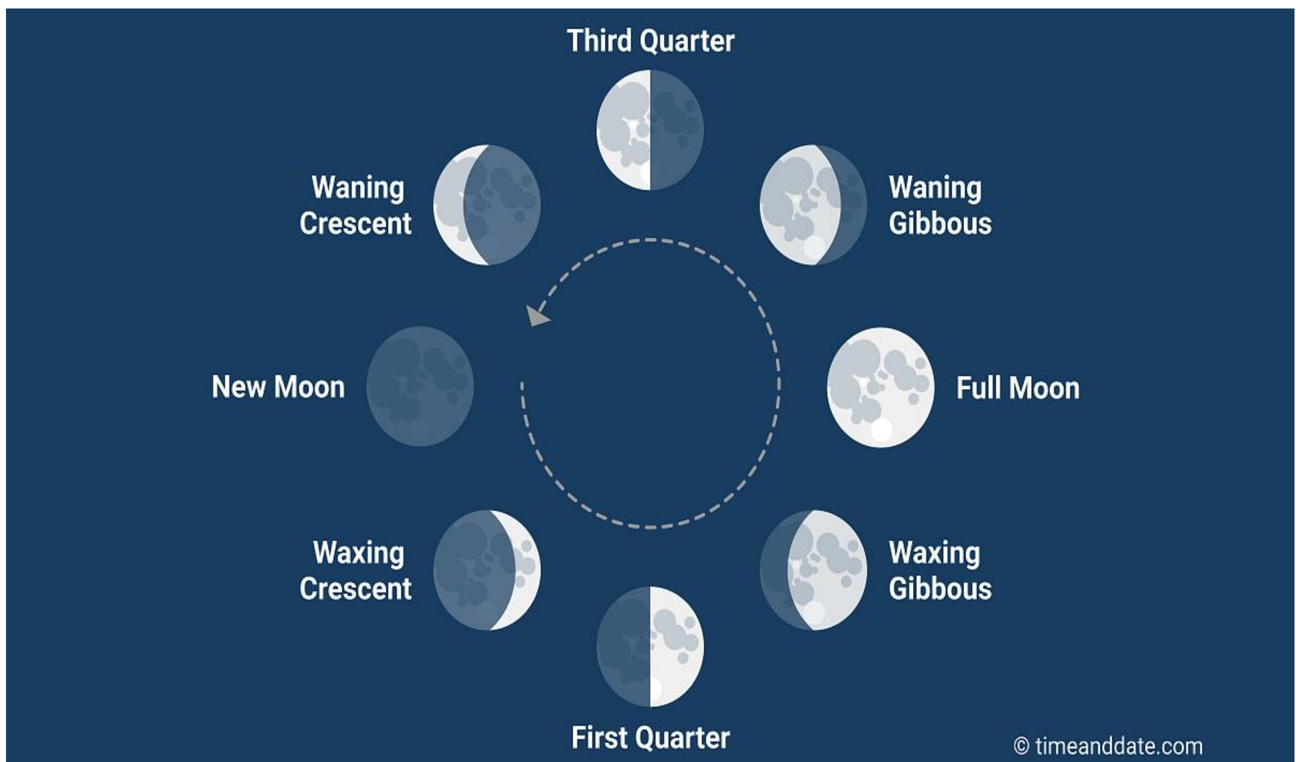
……………………………………………………………………………………………

Lesson 5 : phases of the moon

- the moon revolves around earth around in an elliptical orbit
- the moon has different phases (shapes)in the night sky due to : - earth's revolution around the sun

  - the moon's revolution around earth

  - both earth and the moon revolve together around the sun
- the moon phases are changed during the lunar month (Hijri month)

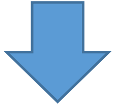


The beginning of lunar month



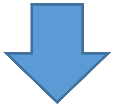
- 1- first crescent : (first day)

- The edge of the moon’s face appears as an illuminated crescent



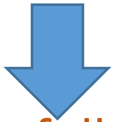


- 2- first quarter





- 3- first gibbous

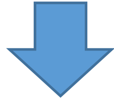




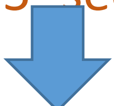
- 4- full moon (in the middle of lunar month)

- The apparent face of the moon that
- faces earth is fully illuminated



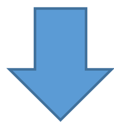


- 5- second gibbous



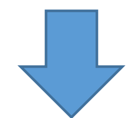


- 6- second quarter



- 7- second crescent





- 8- new moon (last day in lunar month)

The apparent face of moon that faces earth is fully dark



Lesson 6 :planetarium

- it is a place where we can see image of stars , planets , constellation a others celestial bodies
- such as : planetarium in Alexandria
- it has a projector that displays images and it has a special computer programs to show images
- planetarium directors are scientists who work in this place



Class work

- Choose :

1- the moon takes one lunar ………….. To complete one cycle around the earth

a- year b- week c- month d- day

2- ………… is the moon face at which we can see all of the moon face is illuminated

a- dark moon b- fall moon c- new moon d- crescent

3- the sun is star because it ………

a- reflects light b- gives of light c- absorbs light d- allow light to pass through

4- at the beginning of the lunar month we can see only the edge of the moon is illuminated at ………. Face

a- crescent b- dark moon c full moon d- new moon

cross out the odd word :

- Crescent – full moon - earth - gibbous ( )
- Scientific term :
- dark bodies revolve around the sun in fixed orbits ( )
- Give reason :
- The moon is a dark body but we see it shiny at night
- ……………………………………………………………………………………
- planetarium is an important building for space study
- ………………………………………………………………………………